

### **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application.

#### **Listing of Claims:**

**Claim 1. (Canceled without prejudice or disclaimer).**

2. (Currently Amended) The display device according to ~~claim 4~~ claim 7, wherein said control circuit determines whether said driver circuit should provide said precharge voltage based on the value of said display data, and

wherein said driver circuit provides said precharge voltage when said control circuit determines that said driver circuit should provide said precharge voltage.

3. (Original) The display device according to claim 2, wherein said control circuit determines whether said driver circuit should provide said precharge voltage based on the value of upper bits of said display data.

4. (Original) The display device according to claim 2, wherein said control circuit determines that said driver circuit should provide said precharge voltage when the gray-scale voltage corresponding to said display data is higher than a predetermined value.

5. (Currently Amended) The display device according to ~~claim 4~~ claim 7, wherein, when said gray-scale voltage has a positive polarity, said precharge voltage is higher than the gray-scale voltage corresponding to said display data, and when said gray-scale voltage has a negative polarity, said precharge voltage is lower than the gray-scale voltage corresponding to said display data.

6. (Currently Amended) The display device according to ~~claim 1~~ claim 7, wherein a first period during which said driver circuit provides said precharge voltage during said one horizontal period is shorter than a second period during which said driver circuit provides the gray-scale voltage corresponding to said display data.

7. (Currently Amended) The display device ~~according to claim 1~~ comprising:  
a display panel having a plurality of pixel portions arranged in a matrix;  
a scanning circuit to scan lines of said pixel portions; and  
a driver circuit to provide said pixel portions with a gray-scale voltage corresponding to display data and a precharge voltage different from the gray-scale voltage corresponding to said display data, and  
a control circuit to control said precharge voltage based on a value of said display data,  
wherein said driver circuit provides said precharge voltage to said pixel portions prior to providing the gray-scale voltage corresponding to said display data, during one period of scan horizontal periods in which said scanning circuit scans said pixel portions.

wherein the polarity of said gray-scale voltage is equal to the polarity of said precharge voltage, and,

wherein said driver circuit includes an amplifier circuit to generate said precharge voltage by amplifying the gray-scale voltage corresponding to said display data in accordance with a signal from said control circuit.

8. (Currently Amended)    ~~The display device according to claim 1~~  
comprising:

a display panel having a plurality of pixel portions arranged in a matrix;  
a scanning circuit to scan lines of said pixel portions; and  
a driver circuit to provide said pixel portions with a gray-scale voltage corresponding to display data and a precharge voltage different from the gray-scale voltage corresponding to said display data, and

a control circuit to control said precharge voltage based on a value of said display data,

wherein said driver circuit provides said precharge voltage to said pixel portions prior to providing the gray-scale voltage corresponding to said display data, during one period of scan horizontal periods in which said scanning circuit scans said pixel portions,

wherein the polarity of said gray-scale voltage is equal to the polarity of said precharge voltage, and,

wherein said driver circuit includes a power supply circuit to generate said gray-scale voltage, and said driver circuit includes a digital-to-analog converter to select a gray-scale voltage corresponding to said display data, based on said gray-

scale voltage generated from said power supply circuit, an amplifier circuit to amplify the gray-scale voltage corresponding said display data and a switch to select whether to amplify the gray-scale voltage corresponding to said display data, in accordance with a signal from said control circuit.

9. (Currently Amended) A display device comprising:

- a display panel having a plurality of pixel portions arranged in a matrix;
- a scanning circuit to scan lines of said pixel portions; and
- a driver circuit to provide said pixel portions with a gray-scale voltage corresponding to display data and a precharge voltage different from the gray-scale voltage corresponding to said display data, and
- a control circuit to control ON or OFF of said precharge voltage,

wherein said driver circuit provides said precharge voltage to said pixel portions prior to providing the gray-scale voltage corresponding to said display data, during one period of scan horizontal periods in which said scanning circuit scans said pixel portions, and

wherein the polarity of said gray-scale voltage is equal to the polarity of said precharge voltage, and

wherein said driver circuit includes an amplifier circuit to generate said precharge voltage by amplifying the gray-scale voltage corresponding to said display data in accordance with a signal from said control circuit.

**Claim 10. (Canceled without prejudice or disclaimer).**

11. (Currently Amended) The display device according to ~~claim 10~~ claim 16, wherein said control means determines whether said driving means should provide said precharge voltage based on the value of said display data, and

wherein said driving means circuit provides said precharge voltage when said control means determines that said driving means should provide said precharge voltage.

12. (Original) The display device according to claim 11, wherein said control means determines whether said driving means should provide said precharge voltage based on the value of upper bits of said display data.

13. (Original) The display device according to claim 11, wherein said control means determines that said driving means should provide said precharge voltage when the gray-scale voltage corresponding to said display data is higher than a predetermined value.

14. (Currently Amended) The display device according to ~~claim 10~~ claim 16, wherein, when said gray-scale voltage has a positive polarity, said precharge voltage is higher than the gray-scale voltage corresponding to said display data, and  
when said gray-scale voltage has a negative polarity, said precharge voltage is lower than the gray scale voltage corresponding to said display data.

15. (Currently Amended) The display device according to ~~claim 10~~ claim 16, wherein a first period during which said driving means provides said precharge

voltage during said one horizontal period is shorter than a second period during which said driving means provides the gray-scale voltage corresponding to said display data.

16. (Currently Amended) The display device according to claim 10 comprising:

a display panel having a plurality of pixel portions arranged in a matrix;  
scanning means for scanning lines of said pixel portions; and  
driving means for providing said pixel portions with a gray-scale voltage corresponding to display data and a precharge voltage different from the gray-scale voltage corresponding to said display data, and  
control means for controlling said precharge voltage based on a value of said display data,  
wherein said driving means provides said precharge voltage to said pixel portions prior to providing the gray-scale voltage corresponding to said display data, during one period of scan horizontal periods in which said scanning means scans said pixel portions,  
wherein the polarity of said gray-scale voltage is equal to the polarity of said precharge voltage, and  
wherein said driving means includes amplifier means for generating said precharge voltage by amplifying the gray-scale voltage corresponding to said display data in accordance with a signal from said control means.

17. (Currently Amended) The display device ~~according to claim 10~~  
comprising:

a display panel having a plurality of pixel portions arranged in a matrix;  
scanning means for scanning lines of said pixel portions; and  
driving means for providing said pixel portions with a gray-scale voltage  
corresponding to display data and a precharge voltage different from the gray-scale  
voltage corresponding to said display data, and  
control means for controlling said precharge voltage based on a value of said  
display data,

wherein said driving means provides said precharge voltage to said pixel  
portions prior to providing the gray-scale voltage corresponding to said display data,  
during one period of scan horizontal periods in which said scanning means scans  
said pixel portions,

wherein the polarity of said gray-scale voltage is equal to the polarity of said  
precharge voltage, and

wherein said driving means includes a power supply means for generating  
said gray-scale voltage, and said driving means includes a digital-to-analog  
converting means for selecting a gray-scale voltage corresponding to said display  
data, based on said gray-scale voltage generated from said power supply means,  
amplifier means for amplifying the gray-scale voltage corresponding said display  
data and a switching means for selecting whether to amplify the gray-scale voltage  
corresponding to said display data, in accordance with a signal from said control  
means.

18. (New) A display device according to claim 8,  
wherein said control circuit determines whether said driver circuit should  
provide said precharge voltage based on the value of said display data, and  
wherein said driver circuit provides said precharge voltage when said control  
circuit determines that said driver circuit should provide said precharge voltage.

19. (New) A display device according to claim 18,  
wherein said control circuit determines whether said driver circuit should  
provide said precharge voltage based on the value of upper bits of said display data.

20. (New) A display device according to claim 18,  
wherein said control circuit determines that said driver circuit should provide  
said precharge voltage when the gray-scale voltage corresponding to said display  
data is higher than a predetermined value.

21. (New) A display device according to claim 8,  
wherein, when said gray-scale voltage has a positive polarity, said precharge  
voltage is higher than the gray-scale voltage corresponding to said display data, and  
when said gray-scale voltage has a negative polarity, said precharge voltage  
is lower than the gray-scale voltage corresponding to said display data.



22. (New) A display device according to claim 8,  
wherein a first period during which said driver circuit provides said precharge voltage during said one horizontal period is shorter than a second period during which said driver circuit provides the gray-scale voltage corresponding to said display data.

23. (New) A display device comprising:  
a display panel having a plurality of pixel portions arranged in a matrix;  
a scanning circuit to scan lines of said pixel portions; and  
a driver circuit to provide said pixel portions with a gray-scale voltage corresponding to display data and a precharge voltage different from the gray-scale voltage corresponding to said display data, and  
a control circuit to control ON or OFF of said precharge voltage,  
wherein said driver circuit provides said precharge voltage to said pixel portions prior to providing the gray-scale voltage corresponding to said display data, during one period of scan horizontal periods in which said scanning circuit scans said pixel portions, and  
wherein the polarity of said gray-scale voltage is equal to the polarity of said precharge voltage,  
wherein said driver circuit includes a power supply circuit to generate said gray-scale voltage, and said driver circuit includes a digital-to-analog converter to select a gray-scale voltage corresponding to said display data, based on said gray-scale voltage generated from said power supply circuit, an amplifier circuit to amplify the gray-scale voltage corresponding said display data and a switch to select

whether to amplify the gray-scale voltage corresponding to said display data, in accordance with a signal from said control circuit.

24. (New) A display device according to claim 17,  
wherein said control means determines whether said driving means should provide said precharge voltage based on the value of said display data, and  
wherein said driving means circuit provides said precharge voltage when said control means determines that said driving means should provide said precharge voltage.

25. (New) A display device according to claim 24,  
wherein said control means determines whether said driving means should provide said precharge voltage based on the value of upper bits of said display data.

26. (New) A display device according to claim 24,  
wherein said control means determines that said driving means should provide said precharge voltage when the gray-scale voltage corresponding to said display data is higher than a predetermined value.

27. (New) A display device according to claim 17,  
wherein, when said gray-scale voltage has a positive polarity, said precharge voltage is higher than the gray-scale voltage corresponding to said display data, and  
when said gray-scale voltage has a negative polarity, said precharge voltage is lower than the gray scale voltage corresponding to said display data.

28. (New) A display device according to claim 17,  
wherein a first period during which said driving means provides said  
precharge voltage during said one horizontal period is shorter than a second period  
during which said driving means provides the gray-scale voltage corresponding to  
said display data.

29. (New) A display device comprising:  
a display panel having a plurality of pixel portions arranged in a matrix;  
a scanning circuit to scan lines of said pixel portions; and  
a driver circuit to provide said pixel portions with a gray-scale voltage  
corresponding to display data and a precharge voltage different from the gray-scale  
voltage corresponding to said display data,

wherein said driver circuit provides said precharge voltage to said pixel  
portions prior to providing the gray-scale voltage corresponding to said display data,  
during one period of scan horizontal periods in which said scanning circuit scans  
said pixel portions, and

wherein said driver circuit includes an amplifier circuit to generate said  
precharge voltage by changing an amplification factor of the gray-scale voltage  
corresponding to said display data.

30. (New) A display device comprising:  
a display panel having a plurality of pixel portions arranged in a matrix;  
a scanning circuit to scan lines of said pixel portions; and

a driver circuit to provide said pixel portions with a gray-scale voltage corresponding to display data and a precharge voltage different from the gray-scale voltage corresponding to said display data, and

a control circuit to control said precharge voltage based on a value of said display data,

wherein said driver circuit provides said precharge voltage to said pixel portions prior to providing the gray-scale voltage corresponding to said display data, during one period of scan horizontal periods in which said scanning circuit scans said pixel portions,

wherein the polarity of said gray-scale voltage is equal to the polarity of said pre-charge voltage, and

wherein said driver circuit includes an amplifier circuit to generate said precharge voltage by changing an amplification factor of the gray-scale voltage corresponding to said display data.

31. (New) A display device according to claim 30,

wherein said control circuit determines whether said driver circuit should provide said precharge voltage based on the value of said display data, and

wherein said driver circuit provides said precharge voltage when said control circuit determines that said driver circuit should provide said precharge voltage.

32. (New) A display device according to claim 31,  
wherein said control circuit determines that said driver circuit should provide said precharge voltage when the gray-scale voltage corresponding to said display data is higher than a predetermined value.

33. (New) A display device according to claim 31,  
wherein said control circuit determines that said driver circuit should provide said precharge voltage when the gray-scale voltage corresponding to said display data is higher than a predetermined value.

34. (New) A display device according to claim 30,  
wherein, when said gray-scale voltage has a positive polarity, said precharge voltage is higher than the gray-scale voltage corresponding to said display data, and  
when said gray-scale voltage has a negative polarity, said precharge voltage is lower than the gray-scale voltage corresponding to said display data.

35. (New) A display device according to claim 30,  
wherein a first period during which said driver circuit provides said precharge voltage during said one horizontal period is shorter than a second period during which said driver circuit provides the gray-scale voltage corresponding to said display data.